Commercial Tankless **iQ**251, Gen II Submittal Data

Date:		Bid Date:	
Project Name:		Fuel Type:	☐ Natural Gas ☐ Propane
Project #:		Factory Option:	☐ iNTouch-BMS
City | State | Zip:			
Engineer:			
Contractor:			

	Temperature Rise (ΔT)˚F						
	40	50	60	70	80	90	100
Flow (GPM)	12.0	9.6	8.0	6.9	6.0	5.4	4.8

KEY FEATURES

- Stainless (316L) Heat Exchanger
- Flexible-Floating Design, stress-relieving and thermal shock resistant
- Multi-Unit - Masterless cascading with common venting
- Gas Pressures - Operates on gas pressure range of 2.5"-14" w.c.
- ASME-HLW Compliant
- Designed and Built in the U.S.
- 3.5" Color Touch Screen - access to usage data, troubleshooting, and parts wear
- Factory monitoring via telliCare messaging.

PERFORMANCE

- Turndown Ratio of 8.3:1 per unit.
- Cascade up to 10 units with common venting for a total of over 2500MBH and a 83:1 total turndown ratio

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iQ251, Gen II Short Spec & Accessories

The water heater shall be a direct fired tankless, fully condensing, water-tube design. The power burner shall have full modulation. The minimum firing rate shall not exceed 30,000 BTU/HR. The heat exchanger shall be constructed with 316L stainless steel helical water tube and be fully floating with no welded joints. The water heater control system shall incorporate sequencing logic that would allow masterless cascading without the need for a master controller. Cascaded units shall sequence between each other, operating in parallel to meet the load. Each cascaded unit will default to individual control upon failure of the sequencing chain. Changes to operational parameters on any one of the units will automatically adjust all other units to the most recent parameter change.

Recommended Accessories iQ251:

1. Condensate Neutralizer Kit

This condensate is acidic, with a pH level between 3 and 4. Local building codes apply for an in-line neutralizer to be installed (not included) to treat this water.

2. Outdoor Installation Kit

3. iBMS BacNET

Intellihot's iNTouch BMS has three unique features that are not available in any other BMS in the industry.

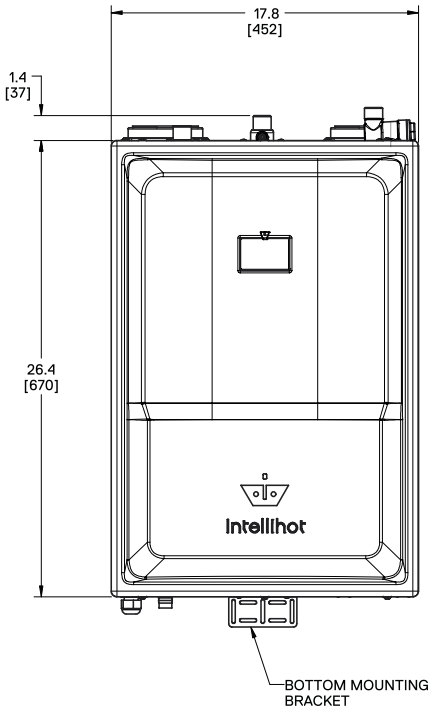
- External Pump Power – Powers building recirculation.
- Remote Setpoint – Allows the temperature to be set remotely via a 0-10 VDC or 4-20mA signal.
- Alarm – Buzzes if it detects anything wrong with any of the components it is connected to, and communicates the appropriate error codes so that the user knows which component needs attention.

iQ251, Gen II Specifications

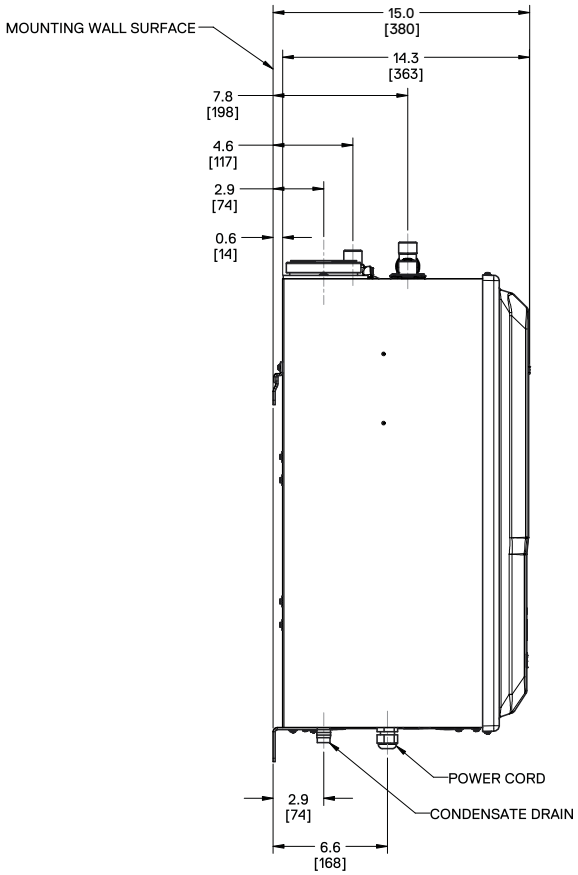
PARAMETERS	**iQ**251, Gen II
Type	Indoor/Outdoor, Wall Hung, Fully Condensing, Tankless On-Demand Water Heater
Fuel	Preset for NG / LP convertible
Minimum / Maximum Input (BTU/hr)	30,000 / 251,000
Maximum Output (BTU/hr)	240,960
Thermal Efficiency	96%
Dimensions H X W X D (Inches)	26.4 X 17.8 X 15 (3.9 CU. FT)
Weight (LBS)	90 LBS
Water Inlet / Outlet Connection	3/4" NPT
Gas Inlet Connection	3/4" NPT
Minimum Flow Rate for Activation	0.6 GPM
Ignition	Electronic Spark Ignition
Venting Type	Direct Vent (2 pipe – intake & exhaust), Power Vent (1 pipe – exhaust only)
Venting Materials	Sch. 40 PVC, Sch. 80 CPVC, Polypropylene, Stainless Steel (AL29-4C)
Max 3" Vent Length – Single Pipe / Power Vent	130 ft; deduct 5 ft per 90º elbow and 2 ft per 45º elbow
Max 3" Vent Length – Two Pipe / Direct Vent	65 ft; deduct 5 ft per 90º elbow and 2 ft per 45º elbow
Common Venting	Yes
Installation Location Ambient Temperature	40ºF – 130ºF
Safety	Flame Rod, Thermal Fuse, Overheat Prevention Device, Fan Speed Monitor, Flue Temperature Monitor, Blocked Vent Detector, Water Shut-Off Valve, 2X10A Fuse, Dual Flame Sensing, Flue Damper
Water Pressure Min / Max (PSI)	30 / 160
Natural Gas and Propane – Minimum Static Gas Pressure 1/2" Pipe	6" WC (non-corrugated, black iron) LP=8" WC
Natural Gas and Propane – Minimum Static Gas Pressure 3/4" Pipe	NG=2.5" WC (non-corrugated, black iron); LP=8" WC.
Natural Gas and Propane – Maximum Static Gas Pressure	14" WC (set Gas regulator to 8" WC for NG 11" WC for LP)
Gas Regulator Pressure Set To	8" WC for natural gas and 11" WC for propane
Electrical Requirements	120V AC, 60 Hz, 15 Amp Circuit Breaker
Power Consumption	500W (Max 4.2 Amps), 8W (Standby)
FEATURES & PERFORMANCE	**iQ**251, Gen II
Listing	ETL (Z21.10.3 / CSA 4.3), ASME HLW, SCAQMD (Low NO_X)
Cascading	Masterless, 10 units
Heat Exchanger	Expandable, Stainless 316L
Hot Water Capacity (35F Rise)	13.8
Hot Water Capacity (45F Rise)	10.7
Hot Water Capacity (77F Rise)	6.3
Commercial Mode Temp. Settings	100 – 190ºF
WARRANTY†	**iQ**251, Gen II
Basic Warranty (without StartUp)	Hex – 1 Year, Parts – 1 Year, Labor - None
Enhanced Warranty (with StartUp)	Hex – 10 Years, Parts – 2 Years, Labor - None
Labor Warranty (with Start Up & telliCare Connection)	Hex – 10 Years, Parts – 2 Years, Labor - 1 Year

† Heat Exchanger assembly (HEX) does not include, gas valve/blower assembly & sidecast. On 10 year| prorated after year 5. On 6 year| prorated after year 3. telliCare Service is free for one year. Start of warranty is: Per startup report or 2 months from date of manufacture, More specific warranty details can be found in 1/0 Manuals section 18.

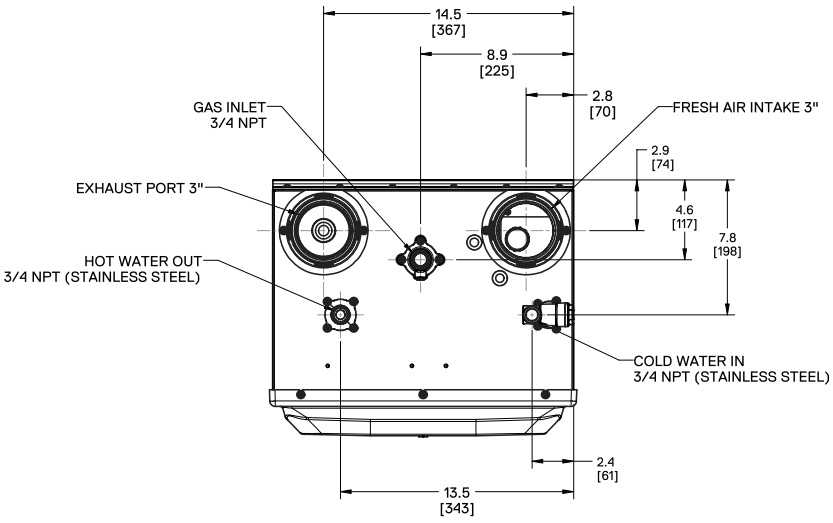
iQ251, Gen II Dimensional Specifications



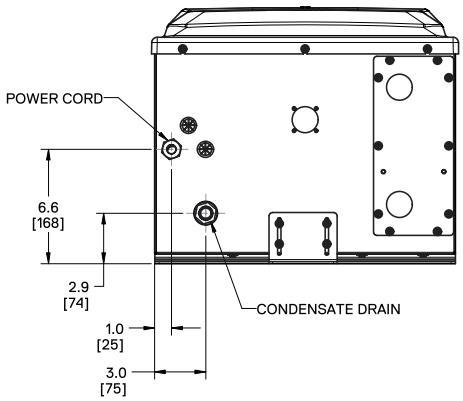
FRONT VIEW



SIDE VIEW



TOP VIEW



BOTTOM VIEW

Note: All dimensions are in Inches, and equivalent metric values are specified within []

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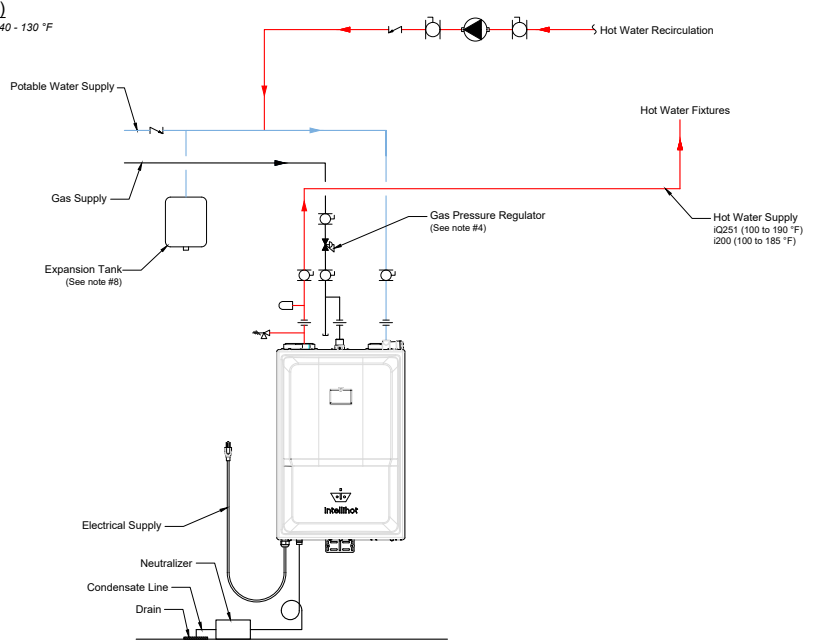
iQ251, Gen II Dimensional Specifications

i200 / iQ251 (1 Unit)

Ambient Temperature Range: 40 - 130 °F
Units are not to scale



LEGEND
- T&P Relief Valve
- Isolation Valve
- Check Valve
- Pipe Coupling
- Sediment Trap
- Recirculation Pump
- Water Hammer Arrestor
- Gas Pressure Regulator

Notes:
1. This schematic is a suggested piping diagram. Any additional requirements from local codes and ordinances shall supersede this diagram.
2. Units are not to be installed in a closed loop system. Our gas fired units are HLW stamped.
3. For pipe sizes and gas pressure requirements, please refer to the operation and installation manual.
4. Gas pressure regulators to be installed for each unit. Follow manufacturer's installation instructions.
5. Water hammer arrestor to be installed within 20 ft of the unit on the hot water supply.
6. Y-strainer is built into the unit and accessible for service from the outside.
7. Temperature and pressure relief valve (shipped with the unit) to be installed on the hot water supply.
8. Expansion tank to be sized based on the gallons of water in the plumbing system and to be installed per manufacturer's instruction.

DRAWING NUMBER:
JOB NAME:

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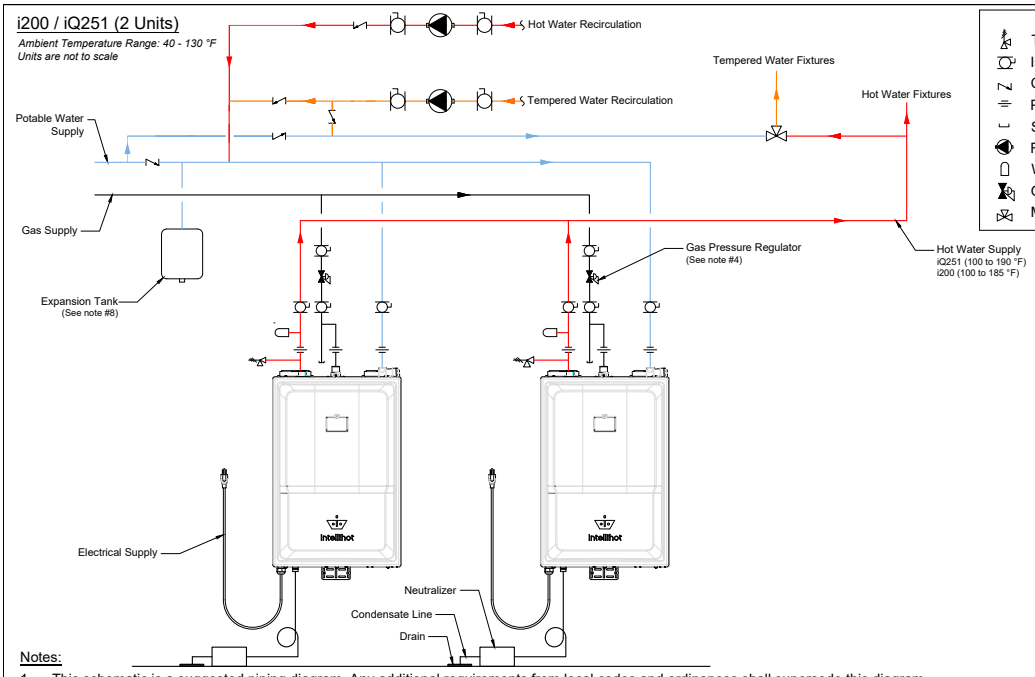
i200 / iQ251 (2 Units)

Ambient Temperature Range: 40 - 130 °F
Units are not to scale



LEGEND
- T&P Relief Valve
- Isolation Valve
- Check Valve
- Pipe Coupling
- Sediment Trap
- Recirculation Pump
- Water Hammer Arrestor
- Gas Pressure Regulator
- Mixing Valve

Notes:
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4. Gas pressure regulators to be installed for each unit. Follow manufacturer's installation instructions.
5. Water hammer arrestor to be installed within 20 ft of the unit on the hot water supply.
6. Y-strainer is built into the unit and accessible for service from the outside.
7. Mixing Valves, Pumps, other Valves etc. to be installed according to their manufacturer's instructions.
8. Temperature and pressure relief valve (shipped with the unit) to be installed on the hot water supply.
9. Expansion tank to be sized based on the gallons of water in the plumbing system and to be installed per manufacturer's instruction.

DRAWING NUMBER:
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iQ251, Gen II Configuration Options

i200 / iQ251 (4 Units)

Ambient Temperature Range: 40 - 130°F
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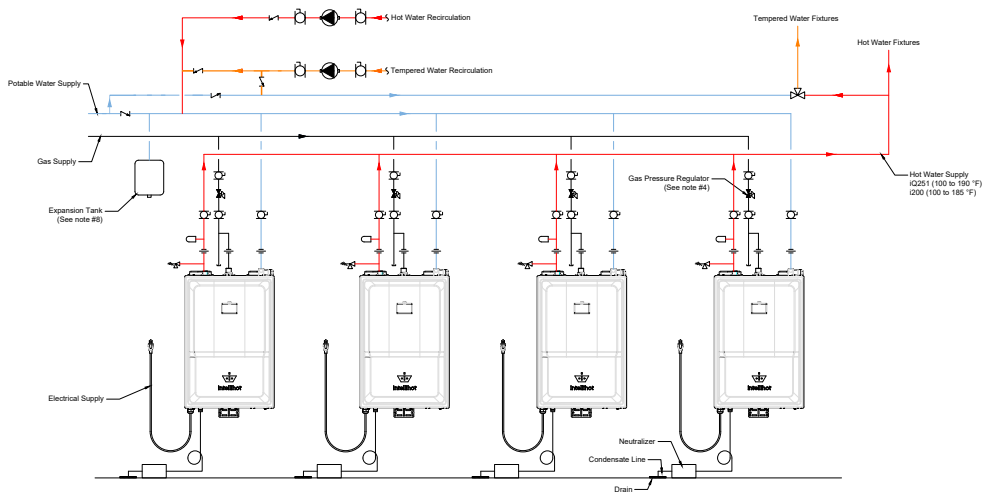

LEGEND
- T&P Relief Valve
- Isolation Valve
- Check Valve
- Pipe Coupling
- Sediment Trap
- Recirculation Pump
- Water Hammer Arrestor
- Gas Pressure Regulator
- Mixing Valve

Notes:

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2. Units are not to be installed in a closed loop system. Our gas fired units are HLW stamped.
3. For pipe sizes and gas pressure requirements, please refer to the operation and installation manual.
4. Gas pressure regulators to be installed for each unit. Follow manufacturer's installation instructions.
5. Water hammer arrestor to be installed within 20 ft of the unit on the hot water supply.
6. Y-strainer is built into the unit and accessible for service from the outside.
7. Mixing Valves, Pumps, other Valves etc. to be installed according to their manufacturer's instructions.
8. Temperature and pressure relief valve (shipped with the unit) to be installed on the hot water supply.
9. Expansion tank to be sized based on the gallons of water in the plumbing system and to be installed per manufacturer's instruction.

DRAWING NUMBER:
JOB NAME:

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i200 / iQ251 (6 Units)

Ambient Temperature Range: 40 - 130°F
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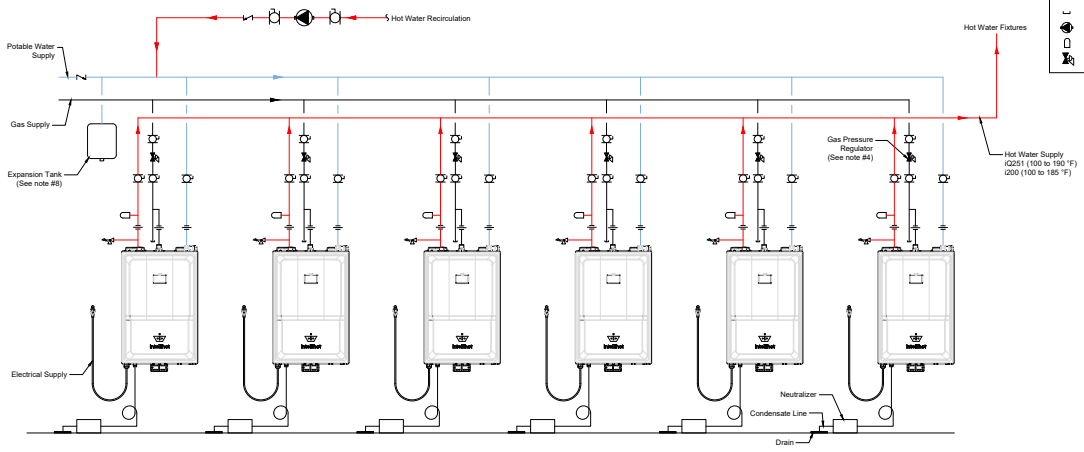

LEGEND
- T&P Relief Valve
- Isolation Valve
- Check Valve
- Pipe Coupling
- Sediment Trap
- Recirculation Pump
- Water Hammer Arrestor
- Gas Pressure Regulator

Notes:

1. This schematic is a suggested piping diagram. Any additional requirements from local codes and ordinances shall supersede this diagram.
2. Units are not to be installed in a closed loop system. Our gas fired units are HLW stamped.
3. For pipe sizes and gas pressure requirements, please refer to the operation and installation manual.
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5. Water hammer arrestor to be installed within 20 ft of the unit on the hot water supply.
6. Y-strainer is built into the unit and accessible for service from the outside.
7. Temperature and pressure relief valve (shipped with the unit) to be installed on the hot water supply.
8. Expansion tank to be sized based on the gallons of water in the plumbing system and to be installed per manufacturer's instruction.

DRAWING NUMBER:
JOB NAME:

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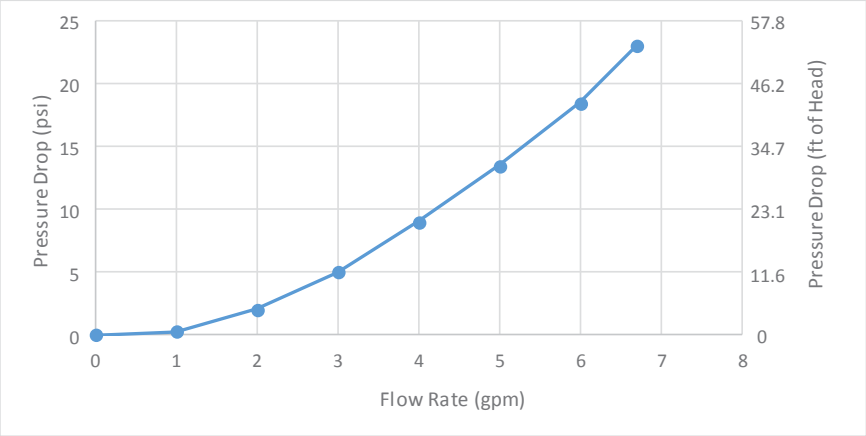
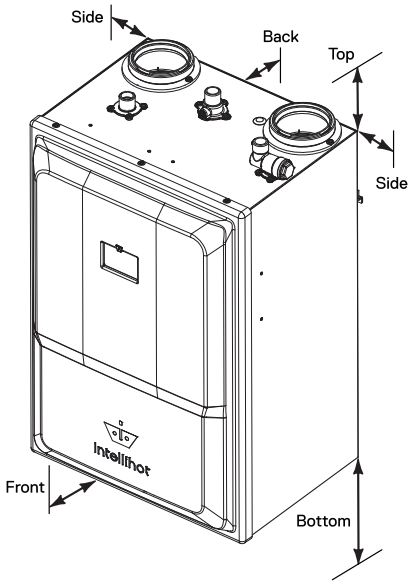
iQ251, Gen II Pressure Drop & Clearance Requirements



Location	Required		Recommended
	From Combustibles	From Non-Combustibles	Service Clearance[1]
Top	6” (152 mm)	2” (50.8 mm)	12” (305 mm)
Back	5/8” (15.8 mm)	5/8” (15.8 mm)	5/8” (15.8 mm)
Sides	1” (25.4 mm)	1/2” (12.7 mm)	5/8” (15.8 mm)
Front	2” (51 mm)	2” (50.8 mm)	30” (762 mm)
Bottom	12” (305 mm)	12” (305 mm)	12” (305 mm)

[1] Service clearances are suggested to allow for normal service.

[2] Mounting bracket automatically sets this dimension.



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iQ251, Gen II Venting Guidelines

		Maximum Pipe Length in Feet			
Number of Units	**Venting Type**	**3" Diameter** **iQ**251, Gen II	**4" Diameter** **iQ**251, Gen II	**6" Diameter** **iQ**251, Gen II	**8" Diameter** **iQ**251, Gen II
1	1 pipe - PV	130	200	200	200
	2 pipe - DV	65	100	100	100
2	1 pipe - PV	-	150	200	200
	2 pipe - DV	-	75	100	100
3	1 pipe - PV	-	70	200	200
	2 pipe - DV	-	35	100	100
4	1 pipe - PV	-	-	200	200
	2 pipe - DV	-	-	100	100
5	1 pipe - PV	-	-	200	200
	2 pipe - DV	-	-	100	100
6	1 pipe - PV	-	-	140	200
	2 pipe - DV	-	-	70	100
7	1 pipe - PV	-	-	100	200
	2 pipe - DV	-	-	50	100
8	1 pipe - PV	-	-	80	200
	2 pipe - DV	-	-	40	100
9	1 pipe - PV	-	-	-	200
	2 pipe - DV	-	-	-	100
10	1 pipe - PV	-	-	-	200
	2 pipe - DV	-	-	-	100

PV = Power Vent
DV = Direct Vent

Notes: Reduce the maximum equivalent length above by 5 feet per 90° elbow and by 2 feet per 45° elbow. Do not exceed above limits.

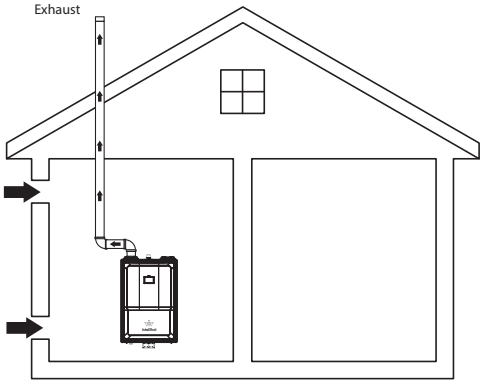
1 pipe - Only exhaust out pipe is connected and the combustion air intake is from within the room. For example, one iQ251 with a 3" diameter, the maximum exhaust pipe length for 1 pipe is 130 feet.

2 pipes - Both the Combustion air intake and the exhaust pipe are connected. In this case, the table specifies the maximum length per pipe. For example, one iQ251 with 3" diameter, 65 feet maximum is allowed for combustion air intake pipe and exhaust out pipe. The 65 feet maximum is per pipe.

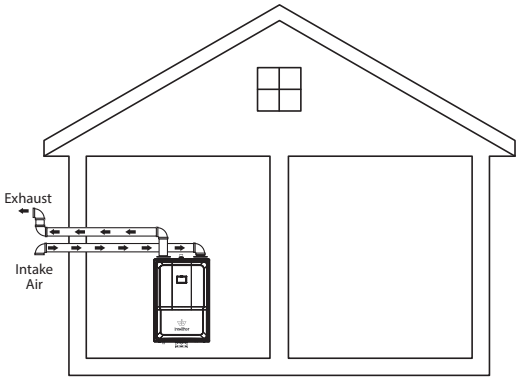
1. Reduce the maximum equivalent length above by 5 feet per 90° elbow used and by 2 feet per 45° elbow used. Do not exceed the above set limits.

2. If multiple units are common vented, then the units must be cascaded. Please refer to the combustion section for how to do combustion with common vented units.

3. SAFETY INSTRUCTIONS: Do not connect any other appliance vents to the water heater inlet or outlet pipes.



1-Pipe Direct Vent



2-Pipe Direct Vent

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